Wonderful Speed of a New Torpedo Boat,

The Havock and the Hornet proved themselves able to do-one a little over 27 knots, the other a little even the builders of the ship had quite expected, and this process. These skeleton leaves can be prepared over 28; but the Daring, built by Messrs. Thornycroft, surprised them not much less than it astonished every by spreading the perfect leaf over some smooth, soft of Chiswick, beat all records at her trial on the Maplin one else who had the good fortune to be on board the surface, and gently striking it with a soft brush. The Sands measured mile, June 23, and attained the unex- Daring. ampled speed of more than 29¼ knots. The run was made against the tide, moreover, and the Daring all the time was blowing off steam hard, as though she might, if it had been thought necessary to press her not for handling of chemicals and possible staining of matter of selection. The numerous contact and printpowers to the uttermost, have put on certainly another fingers which the development of the image on the ing-out papers, the carbon, bromide and platinotype half knot to her top speed. Having, however, as it was, plate involves, and the labor of carrying a camera and processes, are all available, and each in turn is suscepbeaten all records so triumphantly, Mr. Thornycroft the necessary "traps." But photography offers a wide tible of variation and change until a bewildering preferred for the occasion to let well alone and rest on field for recreation and is gracious to the humblest of variety of prints in different colors and styles can be his laurels. There was no possible doubt about the its votaries, as well as to those whose dainty fingers produced. The simplest of all, however, is the ferroperformance, for it was independently checked point may not be soiled by contact with pyro and other dark- prussiate, or common blue-print. While this does not by point by the Admiralty inspectors sent out in the room "messes." It is not necessary to have a costly always give such exceeding sharpness of line as some Daring to report officially on the run, as well as by the "box," or an expensive astigmatic, double back-action picture makers seem to think indispensable, the fact special recording instruments set up on board, and by telephotoscopic objective to get lots of pleasure out of that all the treatment necessary is a thorough washa number of experts, including Sir Frederick Bramwell, one of the many stages of photographic work. With ing in clean water, letting the print, after being presswho watched the behavior of the Daring, chronograph an ordinary 50 cent printing frame, a sheet of clear ed between blotters, dry in the sunlight, is a strong in hand, with the closest interest. The exact figures glass to fit it, a bottle of prepared toning solution, a argument in its favor. for the record-breaking run were-from sea mark to package of printing-out paper and a pin, it is easy to The question of expense need hardly be considered. sea mark, constituting the Admiralty measured mile- make a fine collection of pictures. Fabrics, laces, The first outlay for a 4×5 inch picture would be less time, 23 minutes; speed, 29.268 knots; revolutions of leaves of trees, certain flowers and other things can be than \$1,25, and that would supply material enough for propellers, 395.

There were three high speed trial runs on the measured mile in all, after a series of progressive trials to time the mile at various revolutions of the propellers. The Daring, by the way, is a twin screw vessel. The cobwebby sort, it is necessary to exercise some care in the records of the first two high speed trial runs were: No. 1. Against the tide-time, 2.76 minutes; speed, 28.214 knots; revolutions, 383. No. 2. With the tide-time, 2.6 minutes; speed, 28.571 knots; revolutions, 385. The and accuracy of aim.

The Daring's trial trips were carried out under the Mr. H. O. Arnold-Forster, M.P., Professor Crookes, Sr., who himself designed the Daring, and Mr. John Skeleton leaves, which are often found in the woods in Venice.

Donaldson. The brilliant result of the day's perform- and are caused by the slow decomposition of the epi-

----Photography Without a Camera.

plish surprising results.

All such reproductions will give a white picture on a^{\dagger} Tribune. black ground. For laces, except of the thinnest, most handling. Lay the frame face down, with the back toning solution.

ances proved, it was announced, more successful than dermis, give a beautifully delicate lace-like picture by framework of the leaf will soon be left clean and entire.

One of the beauties of this method of making pic-There are many who would "take pictures" were it tures is the wide scope given to taste and skill in the

reproduced, and a little artistic handling will accom- twenty-four blue-prints, after which the running expense of the plant would be almost nothing. -N. Y.

**** Sir Henry Layard,

The Right Honorable Sir Austen Henry Layard, exout. Put in the glass, and then lay the lace you wish plorer, archeologist, diplomat, and art critic, died at a picture of on the glass, being careful to see that it is his London residence on the 5th of July, after an illsmooth. Then put in the paper, film side to the lace, ness of several weeks. He was born in Paris in 1817. final and record-breaking run of 29¼ knots, or 33½ and then the back goes in place, and is fastened by its After studying law he started on an exploring tour in miles per hour, was made against the tide, with a slight springs. The pin is to be stuck in a corner on the face 1839. The British Museum owes some of its chief sea, and against a strong breeze. In spite of the tre- of the frame, standing straight up, and when the frame treasures to this tireless explorer. His works on Ninemendous pace, the vibration of the little vessel, as she is held so that the pin casts no shadow, the sunlight is veh gave him an enviable reputation, and as they were literally tore ahead through the water, was practically falling squarely on the lace and the paper. When charmingly written, were extensively read both in insignificant, and the Daring could have fought her the paper not covered by the lace is black, take out Europe and the United States. Sir Henry's edition of guns throughout without inconvenience to steadiness the sheets and follow the directions on the bottle of Kugler's "Italian Painting" is a very authoritative work. He was connected with the British embassy in In reproducing leaves it is well to expose them to Constantinople from 1849 to 1852, and was Under Secpersonal supervision of Mr. John Thornycroft, Jr., and direct sunlight for some time before placing them in retary for Foreign Affairs in 1852 and from 1861 to 1866. Mr. S. Barnaby, and among those present on board to contact with the sensitized paper, in order to be sure In 1869 he was appointed minister to Spain. He was witness the day's work were Sir Frederick Bramwell, there is no moisture on them, dampness having a bad, ambassador to Turkey from 1877 to 1880. He was Lord effect on the paper. For greater convenience the Rector of Aberdeen University in 1855-56. During the F.R.S., Professor Vernon Boys, Mr. J.T. Thornycroft, leaves are sometimes fastened to the glass in the frame. latter part of his life Sir Henry lived much of his time

lessening the cost

RECENTLY PATENTED INVENTIONS. Railway Appliances.

CAR FENDER.—William V. Cleary. New York City. This fender is normally held a little distance above the track, but may be instantly released from the platform, when it springs downward into close contact with the track, so that nothing can pass beneath it. It has an inclined front end, is made of a light framework covered with netting, and held to slide vertically on parallel shafts supported beneath the car, arms connecting the shafts with the fender, while there is a spring for depressing the arms, and a catch rod connected with one of the arms extending up through the car floor.

PILOT BAR LIFTER.-Peter G. Cotter, Yuma, Leonidas Holladay, Pima, and Ransom J. Duncan, Yuma, Arizona Ter, A cylinder connected with the steam or air supply is mounted at the front of the locomotive, in such way that its piston may either $\ensuremath{\mbox{di}}$ rectly or through a cam be made to lift the pilot bar, the cylinder being capable of an oscillating or swinging motion to accommodate the movement of the pilot bar in such a manner that, on the breaking of one of the to either side, and the mechanism being under the control of the engineer in the cab. The improvement renders its unnecessary for the brakeman to mount the cowcatcher to make a coupling with the pilot bar.

CONDUIT ELECTRIC RAILWAY.-John H. Tyrrell, New York City. According to this improvement the slotted conduit has a metallic supporting tube with diverging flanges at its lower side, there being an open bottomed clamp embedded in insulating material within tube, the line wire beingheld by the clamp and projecting from the insulating material in such manner that easy contact may be made with the line wire, which is perfectly protected and insulated. Means are also provided for easily shifting the trolley from side to side, and the construction is such that the trolley may be easily disconnected and the brakes applied.

REFRIGERATOR CAR.-Ferdinand E.

PHY.-Thomas M. Crepar, Clare, Mich. Upon a case box about to be filled therefrom before the chamber having a slot in its upper side is a receiving instrument, arrives at the filling position. This invention is also an improvement on a former patented invention of the there being also on the case a circuit breaker having an arm projecting through the slot, the arm being engaged same inventor

by projections on a traveling belt, one end of which is supported in the case and the other end on adjustable pulleys outside of the case, the belt being driven by a clock mechanism. By this means telegraphy may be rapidly, accurately, and mechanically taught, the machine being adjustable for a greater or less capacity of words or characters, and for the desired speed.

Mechanical,

STOP MOTION FOR DOUBLING FRAMES. -Elias Richards and Robert Lucas, New Orleans, La. This invention relates to spinning machinery, and comprises two rollers between which pass strands, slivers, or sheets, and locking devices with movable and stationary portions for holding the rollers, the movable portions normally locking with the fixed portions, and being held in disconnected position by the strands, slivers, or sheets, strands, slivers, or sheets, the rollers will be held immovable. This stop motion is automatic, and prevents single strands from passing through the drawing rollers in case one of the strands breaks.

Agricultural.

PULVERIZER AND HARROW.-Albert D. Powers, Owensborough, Ky. In this machine rows of teeth are located at the front and rear of a wheelsupported frame, the teeth being actuated from the same driving mechanism and alternately operated, being raised by the driving mechanism and dropped by gravity. The teeth are so shaped that the front ones act as a series of hoes and the rear teeth act in the capacity of a rake. All of the teeth may be readily raised from the ground when the machine is to be moved from one field to another. A

nstruction is also provided for which will enable

SHOE FASTENING.-Thomas U. Waling to this improvement, has an upper flap with button holes, each having a downwardly and 'outwardly projecting keeper portion, while an elastic member so connects a button-holding flap with the shoe body that when this flap is pulled on it moves diagonally outward and up- | the chalk holder alone used.

MACHINE FOR TEACHING TELEGRA- hausted hopper and the chamber of the air lock delivery backing is afforded, giving the necessary resiliency and

ward. The heads of the buttons on the button flap are adapted to register with the inlet portions of the button holes in the upper flap; when the lower flap is pulled upward. The fasteners are all engaged or disengaged by a single movement of the fastener holding flap portion of the shoe.

HEATER.-Harriet C. Cowdrey, New York City. This is a simple device in which a lamp is employed to heat a hall or other apartment, without vitiating the air. A shell having a series of openings is provided with a shield fitting tightly around the lamp, the shell having near its lower end a row of openings for the admission of air, while openings near its upper end permit the egress of the heated air. A pipe from near the upper end of the shell leads either to the chimney or out of a window.

ICE CUTTER.-John G. P. Putnam, Claremont, N. H. In a main frame is journaled a driving shaft, with which is geared a propelling shaft carrying propelling wheels and a shaft carrying a circular saw, there being hinged runners for raising and lowering the main frame. As the operators turn the main driving shaft a simultaneous forward movement is given to the frame and a rotary motion to the saw, to cause the latter to cut the ice as the machine moves forward.

BUCKSAW FRAME. - Thomas C. Knowles and William J. Adams. Newton, Mass. The machine to pass over young plants and cultivate the frame proper, according to this improvement, is made of a single flat piece of steel, bent in proper shape to form a handle bar, middle portion, and end bar. On the upper portion of the handle end a second handle is adjustably held by a set screw, a suitable handhold being also secured on its lower end. A light and comparatively strong saw frame is thus 'afforded, which may be made to serve in cutting logs of considerable thickness.

MARKING TOOL. - Louise Schaefer, Oneida, N.Y. This is an inexpensive and simple tool having a spur wheel adapted to penetrate the fabric to be marked and pick up pigment from a marking board ter, Huntington, West Virginia. The shoe body, accord- on the under side of the fabric, and having also a chalk , holder in which chalk is held adjustably to mark the upper side of the fabric over which the tool is run. The spur wheel may be placed in advance of or behind the chalk holder, or the wheel may be dispensed with and

> REGISTER FOR BASKETS, ETC.-Austin B. Culver, Westfield, N. Y. This improvement is more especially designed for registering the count of baskets of grapes as they are passed into the cars, lessening the labor and saving the time of the operator, while insuring the keeping of a proper tally. Combined with a sliding and spring-supported table is a dial carrying a ratchet wheel, a lever loosely pivoted and having a pallet head engaging the ratchet wheel, and a springpressed pitman connecting the lever with the table.

> WATER CLOSET SEAT.- Patrick J. Cahill, Utica, N. Y. This is a seat which may be quickly and conveniently fitted upon the bowl, the spud of the bowl and the spud coupling being utilized as fastening devices, or an equivalent of the spud, and the seat being so connected with the bowl that it is adjustable to any size bowl. The construction is such that when either the seat or its cover is opened, partially or entirely, the hinges will not be placed under undue tension. SASH WEIGHT.-George S. Sergeant,

Greensborough, N. C. This invention provides a method ol/connecting and interlocking two or more short or light veights to form a heavier weight, no bolts, rivets or knotted cords being employed for connecting the weights, and the sectional weights being as cheap as the old style single weights. All of the weights, in each of several forms, may be used as taken from the mould, and a sec-

Canda, New York City. In this car a hatch is arranged in the roof above the ice crate, there being superposed air tight doors for closing the hatch and a recess frame rigidly secured to the top of the car over the hatch, while a lid made in two sections is hinged to the screen frame at the center. The arrangement is such that a low or high temperature is secured by means of a constant and natural circulation of dry air, the temperature being maintained with great economy.

Electrical.

TELEGRAPH REPEATER.-Alfred D. P. Weaver, Jackson, Miss. This invention relates to in struments to cause a message coming over one line to be repeated over another line without the aid of an interme diate operator. The improvement consists in the peculiar construction and arrangement of parts and of the circuits and their connections, the object being to cheapen and simplify the instrument, reduce the number of connections, economize the local batteries, reduce the liability of failure, avoid mutilation of signals, and enable it to be more easily understood by inexperienced operators.

ground at each side of the plants,

Miscellaneous.

PNEUMATIC GRAIN CONVEYER -Frederic E. Duckham, Millwall Docks, London, England, This is an improvement on a former patented invention of the same inventor, of an apparatus for loading and unloading ships' cargoes, and consists in the combination with oscillating two-chambered air lock delivery boxes of pneumatic apparatus working by exhaustion, with means whereby the conveyance of grain is effected by a current of air under pressure, the means comprising a closed chamber into which the air lock delivery box discharges, supplied with air under pressure and containing a nozzle with air supply sleeve immersed in the grain and connected to a conveying pipe leading to the place of delivery.

PNEUMATIC GRAIN CONVEYER DELIV-ERY APPARATUS.—This is a further patent of the same inventor for an improvement to cause equilibrium of air essure to be automatically established between the ex-iverse perforations, whereby a lighter and more elastic of this paper,

PIPE HOLDER.-John B. Davis, Moline, Ill. This is a device for holding a stove or furnace pipe securely in the chimney, and also to fasten the sections of the pipe in position to form a gas and dust tight joint. A bar secured to the pipe projects between the pipe and a thimble, the bar having an inwardly extending book receiving the pipe and an outwardly projecting lug extending through the thimble.

RUBBER HAND STAMP.-Robert S. Hall, New York City. This stamp has a flexible rubber backing of cellular structure, its walls connected at all points of intersection and juncture with the outer margin, while the walls and the outer margin have trans- send name of the patentee, title of invention, and date

tional weight of given diameter weighs almost the same as a solid non-sectional weight of the same length.

PENHOLDER. - Edwin P. McCollom, David City, Neb. The holder proper, according to this improvement, is formed of a rod having a head with intermediateand/return wings with a pen/seat between them, while a sleeve sliding on the head incases and compresses it to clamp the pen. The pen may at any time be conveniently discharged from the holder without soiling the hands or it may be incased and put in the pocket when not in use.

TENT AND SUPPORT. - Patrick F. Noonan, Fort Stanton, New Mexico. This tent has a central tubular support capable of use as a stove pipe, dispensing with the ordinary pole and tripod. The cap is so arranged as to obviate the necessity of its removal, and to prevent leakage in wet weather, the improvement providing for a stove in the center of the tent and the utilization of the greatest possible portion of the space,

Note.-Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please